

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) FLUID PRESSURE-INDICATING DEVICE

(71) We, JOUVENEL & CORDIER S.A., a French body corporate, of P.O. Box 41, (92), Nanterre, France, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a fluid pressure indicating device for visually indicating fluid pressure, that is to say a device intended to indicate whether fluid pressure is, or is not, present in a pipe system. Such a device performs the same function as that of warning lamps provided in electrical circuits to indicate the presence of voltage in a conductor.

According to the invention there is provided a fluid pressure indicating device comprising a first resilient and fluid tight diaphragm arranged so as to be exposed to the pressure to be indicated and overlaid by a second diaphragm having one or more slits therein, the arrangement being such that expansion of the first diaphragm on the application of pressure thereto distorts the second diaphragm to open the slits thereby to expose part of the surface of the first diaphragm which is visually distinctive from the surface of the second diaphragm.

A preferred embodiment of the invention will now be described by way of example, with reference to the accompanying drawing.

Figure 1 is a sectional view of a fluid pressure indicating device according to the invention, and

Figure 2 is a plan view of the device shown in Figure 1, when subjected to fluid pressure.

Referring to Figure 1, it will be seen that the device comprises a body 1 adapted to be screwed or similarly connected to a pipe (not shown) in which it is required to detect any fluid pressure that may be present.

The body 1 has a central bore 2 which opens into an inner chamber 3. The chamber 3 is closed by a first flexible, deformable diaphragm 4, made of rubber, for example. The diaphragm 4 is thus directly subjected to

any pressure that may obtain in the chamber 3 and thus in the bore 2 of the body 1. The diaphragm 4 is fluid tight.

Overlying the diaphragm 4, on the side of the diaphragm 4 remote from the chamber 3, is a second flexible deformable diaphragm 5. The diaphragm 5 is visually distinctive from the diaphragm 4, for example, the diaphragms may each be of a colour differing from the other, or one diaphragm may have lines running transversely to lines on the other diaphragm, the two sets of lines being of the same or different colours. The diaphragm 5 has one or more slits, for example it may be divided into four sectors by two slits passing through the centre and at right angles to each other.

The body 1 also comprises a transparent inspection window or cap 6 held by a nut 7. The cap 6 also serves to hold the diaphragms 4 and 5 in position in the body as a result of the clamping action of the nut 7. In order that the diaphragm 5, when in the inoperative condition, shall be subjected only to atmospheric pressure, the cap 6 has a passage 8 connecting a chamber 9, lying between the diaphragm 5 and the cap 6, with the atmosphere.

The pressure indicating device operates as follows:—

When there is no pressure in excess of atmospheric pressure in the bore 2 and the chamber 3, the diaphragm 4 is in the inoperative position and, like the diaphragm 5, it remains flat. The diaphragm 5 is thus not deformed and only the upper part of the diaphragm 5, of say a certain colour, can be seen through the cap 6.

If pressure in excess of atmospheric pressure is present in the bore 2 and thus in the chamber 3, the diaphragm 4 is deformed under the action of this pressure. It assumes a convex shape and is pressed against the diaphragm 5 to which it transmits deformation. During the deformation of the diaphragm 5, the visual effect shown in Figure 2 can be seen to appear through the cap 6 as a result of the slits being opened, that is to say the diaphragm 4, of say a certain colour, is

observed to appear through the cut-away portion in the diaphragm 5 which is of say another colour. The presence of pressure is thus readily detected by simple visual observation.

It will, of course, be understood that the invention is not limited to the embodiment described and illustrated, but that it covers all the variants thereof as defined by the appended claims. Thus, in particular, the particular form of the diaphragm 5, illustrated in Figure 2 of the drawing, constitutes but one example.

WHAT WE CLAIM IS:—

1. A fluid pressure indicating device comprising a first resilient and fluid tight diaphragm arranged so as to be exposed to the pressure to be indicated and overlaid by a second diaphragm having one or more slits therein, the arrangement being such that expansion of the first diaphragm on the application of pressure thereto distorts the second diaphragm to open the slits thereby to expose part of the surface of the first diaphragm which is visually distinctive from the surface of the second diaphragm.

2. A fluid pressure indicating device according to claim 1, wherein the visible surfaces of the diaphragms are of different colours.

3. A fluid pressure indicating device according to claim 1 or claim 2, wherein the second diaphragm is slit along two lines which pass through the centre of the diaphragm and extend at right angles to each other.

4. A fluid pressure indicating device as claimed in any preceding claim including a body having a bore therein adapted to be connected with the source of pressure, a chamber formed in the body and connected with the bore, and means for securing the first diaphragm on the body so as to seal the chamber.

5. A fluid pressure indicating device as claimed in claim 4 including a transparent inspection window arranged over the second diaphragm.

6. A fluid pressure indicating device as claimed in claim 5, wherein the first diaphragm, the second diaphragm and the inspection window are secured in position on the body by means of a flanged nut.

7. A fluid pressure indicating device substantially as herein described with reference to the accompanying drawing.

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COMPLETE SPECIFICATION

1 SHEET

This drawing is a reproduction of
the Original on a reduced scale

Fig.1.

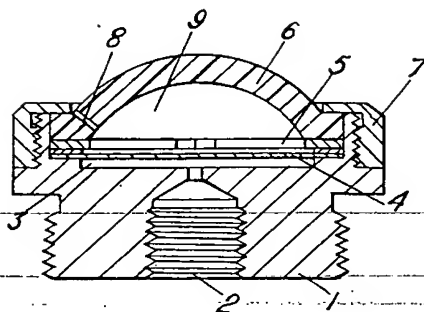


Fig.2

